

IN THE U. S. DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA

NEW AGE PRODUCTS, INC.,)
Plaintiffs,)
VS.) CASE NO. 96 2129 JCGA
PROGRESSIVE INTERNATIONAL CORP.,)
Defendants,)

* * * * *

DEPOSITION OF LUIE R. VIZURRAGA

Luie R. Vizurraga taken on Direct Examination before
Bonnie L. Sabados, a Notary Public for the State of Ohio,
by the Defendant in this case, pursuant to stipulations
of counsel hereinafter set forth at the offices of
Allied Resinous Products, Inc., Clark and Whitney Road,
Conneaut, Ohio, on Thursday, August 7, 1997 at 1:00 p.m.

Bonnie L. Sabados, RPR
Court Reporter
804 Detroit Street
Conneaut, Ohio 44030
(216) 593-3089

1 APPEARANCES:

2 Via telephone conference call:

3 Kathleen A. Pasulka
4 Lawrence Maxwell
5 Brown, Martin, Haller & McClain
6 1660 Union St.
7 San Diego, California 92101-2926

8 On behalf of the Plaintiffs

9 Present in person:

10 John R. Benefiel
11 Attorney at Law
12 280 Daines Street
13 Suite 100 B
14 Birmingham, Michigan 48009-6244

15 On behalf of the Defendants

16 * * * * *
17 S T I P U L A T I O N S

18 It is hereby stipulated and agreed by and between
19 counsel for the respective parties herein, that this
20 Deposition may be taken in Stenotype by Bonnie L. Sabados,
21 Court Reporter and Notary Public, and by her transcribed
22 with computer aided transcription into a manuscript in the
23 absence of the witness; and that the signature of said
24 witness to this deposition is waived.

25 This deposition taken pursuant to subpoena.

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1 Upon being administered the oath,
2 LUIE R. VIZURRAGA responded: I do; and testified as
3 follows:

4 DIRECT EXAMINATION

5 BY MR. BENEFIEL:

6 Q. Could you repeat your name for the record
7 please?

8 A. Luie R. Vizurraga, V-i-z-u-r-r-a-g-a.

9 Q. And you are responding on behalf of --

10 A. Allied Resinous Products, Incorporated.
11 I am the president, CEO.

12 Q. You received a subpoena for this
13 testimony?

14 A. I did.

15 Q. Could you tell me how long you have been
16 president, CEO --

17 A. Since 1982.

18 Q. Do you have a technical background at
19 all?

20 A. Yes. I'm a polymer chemist, a
21 pharmacist. I have an MBA degree and toxicologist.
22 I think that's enough.

23 Q. Yeah, that's fine.

24 MS. PASULKA: Excuse me,

25 Mr. Benefiel. Could you speak up just a

1 little bit more please?

2 MR. BENEFIEL: Okay.

3 MS. PASULKA: Thank you.

4 Q. Do you get involved in the technicality
5 of the business of Allied?

6 A. Yes. Day to day business.

7 Q. And also, you are knowledgeable about
8 plastics and other technical matters?

9 A. I am a polymer chemist.

10 Q. In response to the subpoena which
11 included a request for documents production, I did
12 receive from you an objection in writing as to the
13 impracticality, at least on this notice, and without
14 compensation, in going through your invoices to
15 respond to at least some of the requests in that
16 subpoena, isn't that correct?

17 A. Yeah. We found some information that you
18 could or could not use. I don't know. It's up to
19 you.

20 Q. Okay. You have produced certain
21 historical information regarding plastics offered in
22 the past and material characteristics?

23 A. We have produced for you precisely by
24 accident, so-to-speak, surprise, for way back from
25 1966. We have supplied for you some mechanical and

1 chemical properties and polypropylene from back from
2 that age. And we also have provided you with
3 corporate brochures way back from 1982. And all this
4 is polypropylene. Also some polyethylene. In those
5 brochures, going to see information on low density
6 polyethylene, polypropylene, homopolymer, and high
7 density polyethylene and some polystyrene. That's
8 all.

9 Q. You have knowledge, personal knowledge
10 that these materials came from the records of Allied
11 Resinous?

12 A. Oh yeah.

13 Q. Could you overview the nature of the
14 business of Allied Resinous?

15 A. Allied Resinous Products is in business
16 from the end of the second world war in the
17 processing of sheet extrusion. And also profile
18 extrusion, rod and cubing plastics extrusion, and
19 some compounding.

20 Q. And that's primarily in these materials
21 that you mentioned before?

22 A. Basically, yes.

23 Q. What kind of -- let me back up from
24 there, do you get resins from suppliers and extrude
25 them?

1 A. Yes, that's it. The way the process
2 works is we buy the raw materials. Raw materials
3 meaning pellets. And these pellets are physical form
4 sold by the major producers. For example, Shell
5 Chemical Company, Phillips Chemical Corporation.
6 Exxon Corporation, Dow Chemical, etc., etc., etc. We
7 take those pellets and we remelt them. And we add
8 additives when necessary such as pigments for color.
9 We add stabilizers when needed, and some other
10 additives based on what the customer requires or what
11 the market needs. We also produce sheeting without
12 any additive. Straight conversions from the
13 suppliers. And the properties that you have been
14 provided are exactly that, without no modification
15 whatsoever. In reality, a lot of those properties
16 come from the original resin manufacturers.

17 Q. Okay. Those specification sheets,
18 whatever you want to call them?

19 A. That's it. Recopied from the major resin
20 suppliers.

21 Q. As far as you know, is that standard
22 practice in the plastics industry?

23 A. Oh yeah, that's right.

24 Q. To rely on the resin suppliers for the
25 material characteristics?

1 A. You have to. You have to.

2 Q. Do you make both standard products from
3 your catalog, I assume that's true, and custom
4 products?

5 A. That's right. What normally custom
6 products, we do cut to size, different gauges that
7 are not published on the price lists. Maybe
8 different types of size and width and in length.

9 Q. When you cut to size, does that mean that
10 you take your standard 4 by 8 sheets or 3 by 4
11 sheets, is that what -- and cut them --

12 A. I don't recollect exactly all these years
13 the size that we have been reprocessing of a sheet
14 extrusion. But I guess, as far as I remember, I
15 recollect we have been cutting sheets, my lord, of
16 all different sizes. Maybe 2 inches thickness to
17 maybe 15 inches long. From 14 inches to 18 inches.
18 It's so wide, the custom size. I don't even remember
19 because there is so many of them.

20 Q. You have equipment here in the shop that
21 you do the cutting?

22 A. Cutting, yes.

23 Q. Is that done with die cutting or other
24 means?

25 A. No. What we have here is sheet

1 extrusion, and we have a cutting with saw, electric.
2 So if you are a customer, and you require to cut thin
3 sheeting, what we call a thin sheeting, anywhere from
4 7 thousandths to let's say 80 thousandths of an inch,
5 we can not die cut it because we don't have that
6 equipment. We just sell those products in rolls, let
7 the customer do their own cutting.

8 Q. Could you list who your customers are at
9 least in a general way?

10 A. Normally in this business, you sell
11 through a distribution. And distribution, you go to
12 the International Association of Plastics
13 Distributors. Those are our customers. Eight, nine
14 hundred, two thousand distributors. Those catalogs
15 can be available to you through the International
16 Association of Plastics Distributors.

17 Q. Your catalogs have been published or made
18 available to the public through --

19 A. Our catalogs available to the customer
20 public. Not just anybody. Had to be customer. On
21 this customer are preferable in reference to
22 distributors.

23 Q. You can call up this Association of
24 Plastic Manufacturers and get your catalog?

25 A. No, no. The International Association of

1 Plastics Distributors is not a clearing house for
2 distributing your catalogs. Just an association
3 you are a member, and that's it. They will not do
4 the leg work for you. It's the same thing as
5 American Chemical Society. We are members, but the
6 American Chemical Society is not going to distribute
7 or market on our behalf. We have to do that on our
8 own.

9 Q. How many distributors do you have?

10 A. It's hard to tell. I would say probably
11 around 800.

12 Q. And they would -- the distributors would
13 have your products catalog?

14 A. Products catalogs in various forms.

15 Q. And that would be shown to end users to
16 select the products?

17 A. Yes. The way it works, the distributor
18 themselves have a team of salesmen. And what they do
19 with these people, they send the salesmen to the
20 trade, to the market, to various industries. I'm
21 talking about consumer, packaging, medical,
22 transportation, government, military, so many ways.
23 And this salesman knocks on the doors, soliciting,
24 you know, the usage of these products. We don't know
25 who the customers are because those are a proprietary

1 listing of the distributors. And they keep this
2 listing very well guarded. They don't want us to
3 know who they are because they are afraid we may go
4 directly, you know, to the customers. And that's the
5 way it works.

6 Q. With your cutting board product, does
7 that work the same way?

8 A. No, cutting board, it is a different
9 product. Because cutting board, we have cutting
10 boards -- you can sell cutting boards to two distinct
11 markets. One is consumer, other is institutional.
12 The consumer is when we sell cutting boards cut to
13 size, and we sell through reps or through joint
14 ventures, through directly to retailers, such as
15 K-Mart, Wal-mart, Bath and Beyond, Target, etc.,
16 etc., etc. That is not to say that we sell directly
17 to these people, and that's not to imply we are today
18 selling to these people. But that's the way it
19 works. The other way to sell cutting boards, we sell
20 to the institutional, meaning such as restaurant
21 suppliers or furniture manufacturers or supermarkets,
22 or institutional, you know. And they buy the full
23 sheets, and they do their own cutting. These sheets
24 are sold directly by us, or they are sold through a
25 distributor. Either way.

1 Q. When they are sold directly, the customer
2 learns of the availability of products from what?

3 A. When we sell directly to the OEM, to the
4 customer, if it is a consumer product, we sell, for
5 example, to the actual retailer. Let us take, for
6 example, if we sell to Homeplace, we have a marketing
7 company that works with us and for us, and they do
8 the leg work and the selling for us. And we do that
9 in a private label especially. We also sell to
10 Williams and Sonoma on private labels. It's a
11 catalog and retailer that has outlets throughout the
12 country. Now, when we sell to institutional, that's
13 a different type of marketing. You do sell that
14 directly. We use our own sales people. Or sometimes
15 we use distributors also.

16 Q. The method of manufacturing sheets here
17 is exclusively extrusion again?

18 A. In this company, it is extrusion, yes.
19 We have three divisions here in this company.
20 Compounding division, meaning we take the basic
21 pellets, as I described earlier. We add additives,
22 either minerals, organic or inorganic, to modify the
23 properties of the plastics to the requirements of the
24 customer. The second division is sheet extrusion
25 division. We convert these compounded pellets into

1 sheet form. And we have the consumer products
2 division. Takes these sheets and manufactures
3 further into a final product such as cutting board.

4 Q. That's the thicker size?

5 A. That's in the thicker sizes. That's
6 right. Cutting board we sell in the market, I would
7 say biggest volume is from a quarter of inch to
8 probably an inch thick cut to size.

9 Q. In the extrusion process, is there
10 sometimes blended in like polyethylene into
11 polypropylene to improve the performance of the
12 extrusion process?

13 A. Extrusion is known in polymer
14 engineering, mastication. You can do all that. It
15 is not unknown to the industry. You can combine.
16 You can mix and you can alloy. You can chemical
17 react various components. That's very common.

18 Q. Is that done routinely here?

19 A. No. In this company, we do it just
20 mixtures. That's all, all we do.

21 Q. Don't blend plastics, you add other
22 additives?

23 A. We add additives. We mix with other
24 components. We add concentrates, color concentrates
25 we add. Heat stabilizers. We have so many

1 additives. But mixtures, add mixtures in the process
2 of extrusion. We add that in the process of
3 extrusion.

4 Q. Do you subcontract die cutting for the
5 customer to a local die cutting shop?

6 A. Sure, we have done that many times.

7 Q. Can you identify the subcontractors?

8 A. Oh yes. One is Iten Industries,
9 Ashtabula, Ohio.

10 Q. Ashtabula?

11 A. Ashtabula. Iten Industries. It does a
12 lot of die cutting.

13 Q. How do you spell the name?

14 A. I-t-e-n, I believe. Iten.

15 Q. I-t-e-n Industries?

16 A. In Ashtabula, Ohio. They do a lot of die
17 cutting. They do a lot of slitting. Slitting means
18 they slide the rolls in various widths.

19 Q. Is there anybody else that you have used
20 a lot?

21 A. Oh god, we have. I don't remember.

22 Q. Sometimes the thin gauge is sold,
23 extruded sheets is sold by Allied on rolls, and other
24 times in flat sheets?

25 A. That's right.

1 Q. Is there a reason for that?

2 A. Preference, economics, market requests.

3 Q. The customer asks for it that way?

4 A. Asked that way, you know.

5 Q. Do you know why they would prefer one or
6 the other, the customer?

7 A. No, I don't know. Sometimes, you know,
8 customer requests odd things. I don't know why they
9 do that. Basically economically is selling in roll.

10 Q. It's cheaper in roll?

11 A. Absolutely, cheaper. From there, they
12 just process it, recut it, die cut it or whatever.
13 They can stack these things for die cutting.

14 Q. With the rolls, they can get them into a
15 thermoforming machine or something like that?

16 A. Thermoforming, die cutting machine and
17 automatically, so on so forth. Yeah.

18 Q. Probably for automatic feed, would that
19 be your guess?

20 A. Automatic feed, yes. If you are going to
21 go injection molding or die cutting automatically.
22 If the sheets are 60 thousandths of an inch, can
23 stack them and secure them and die cut them with a
24 die. They can die cut up to one inch thick. So you
25 have lots of sheets stacked together.

1 Q. From the papers you produced, which we
2 will make them of record here in a couple minutes,
3 but it appears that you have been selling Resinol
4 type O which is polypropylene, in gauges down to 20
5 thousandths thickness in sheets for many, many years?

6 A. Yes. Many, many years. Way before my
7 time.

8 Q. Same thing with polyethylene, both the
9 high density and low density?

10 A. Correct.

11 Q. Is there some records kept that would be
12 able to identify which particular resin you were
13 using in a particular run or a particular production,
14 particular production interval?

15 A. No, we have no records. If you ask me
16 what resins you use in 1967, 6:00 p.m. in the
17 evening, I would say it's impossible to find out.
18 If you ask me was the gauge 20 thousandths
19 polypropylene in 1981, who knows? I don't know.

20 Q. The resin can't be identified at this
21 point?

22 A. First of all, we don't have the rolls
23 produced 10, 15 years ago. Number two, even if you
24 found rolls in the market, no way you can make a
25 difference between Dupont resins or Shell resins or

1 whatever at that time. Besides, some of these
2 chemical companies have changed names.

3 Q. The records you did produce, it listed
4 the specifications that would presumably correspond
5 to whatever resin you were using at that time?

6 A. Exactly. Whoever producer was used at
7 that time. I don't know who they were at that
8 particular time. It could have been Shell Chemical
9 Company. Could have been so many other companies.

10 Q. But presumably, you would continue -- or
11 would you, you would continue using a given resin as
12 long as you were using the properties sheet?

13 A. Yeah. The properties sheet is a
14 guideline. That will give ranges. Mechanical
15 properties. If you, for example, sell a resin of a
16 specific gravity from this level to that level, we
17 conform it with those ranges. If we say, for
18 example, flexural modulus may from 150 thousand psi to
19 210 thousand pounds per square inch, we have to
20 conform with that because that is what we are
21 selling. If we don't achieve that, then we are
22 liable, because that's what we were recommending.

23 Q. How do you know you are conforming?

24 A. Because in today's market when you buy a
25 resin, each manufacturer of those resins gives you a

1 mechanical and chemical data sheet. When we use
2 those data, we make sure it falls into that range of
3 products.

4 Q. I see. You make sure you're using that
5 company's resin that they specify is in this range?

6 A. That's it.

7 Q. You don't test it yourself for
8 conformance?

9 A. No, we can not. We don't have the means
10 to do it. We rely on those properties.

11 Q. Have you ever made reference to the
12 Modern Plastics Encyclopedia?

13 A. For reference? I always use Modern
14 Plastics Encyclopedia for reference.

15 Q. So far as looking for material
16 characteristics?

17 A. Yes. I use a lot of encyclopedias
18 available. Numerous in the market. Modern Plastics
19 being just one of them. Today, of course, we use in
20 CD's and also use on Internet. But in the written
21 form, paper, there are many of them in the market.
22 Most frequently, the one we use perhaps is the Modern
23 Plastics when we want to verify processing
24 temperatures, verify mechanical properties. Customer
25 calls us, what plastics can we use for such and such

1 and such application. So we look, that's the first
2 thing that we do. After that, we go into a
3 literature search of the University of Akron for some
4 other more in depth findings.

5 Q. Does Allied -- presumably does have
6 competitors?

7 A. Many of them.

8 Q. Are you familiar with the types of
9 products that they are offering?

10 A. Basically the same as ours.

11 Q. Polyethylene extruded sheets?

12 A. That's right.

13 Q. In similar gauges, would you say?

14 A. That's right. It's a commodity. It's
15 like bread, butter, pork belly, etc., etc.

16 Q. What about copolymers?

17 A. Copolymers we have produced, as far as I
18 recollect, but I don't remember when, how and if.
19 Copolymers we sell for medical profession. But the
20 thickness, you know, when was the first time we used
21 copolymer for medical profession? I don't remember.
22 Everything that we gave you is there. And I don't
23 think it mentions anything about copolymers in the
24 literature that we gave you.

25 Q. No, not in the time frame there, but

1 there is your recent literature, I believe, mentioned
2 copolymer.

3 A. Oh yeah, we use copolymer for medical.

4 Q. Down to 30 thousandths?

5 A. That's right. That's for medical. When
6 we start, I don't know that.

7 Q. What do you call that material anyway,
8 copolymer?

9 A. Vizcomedic.

10 Q. Vizcomatic?

11 A. Vizcomedic.

12 Q. Vizcomedic.

13 A. That's the line of medical products that
14 we use for the orthotic and prosthetic.

15 Q. Some of your competitor's names, is
16 Primex one?

17 A. Yeah, Primex is one.

18 Q. You supply companies like Cadillac
19 Plastics?

20 A. Exactly, that's distributor.

21 Q. That's one of your distributors?

22 A. Exactly.

23 Q. I think that's where I got your name.
24 You've got them to blame. You will have to write
25 them a letter. Cadillac, that seems to be a

1 nationwide distribution?

2 A. International. Big company. Gross sales
3 I would say probably around 700 million dollars per
4 year.

5 Q. They also deal with your competitors?

6 A. Oh yeah. Like gypsies. They buy from
7 anybody. Price wise, they don't care.

8 MR. BENEFIEL: Well, I think we could
9 get into the documents that have been
10 produced. For the record, I think we have
11 got two ring binders that had some old
12 price and brochure information collected.
13 And we pulled out some of those pages that
14 related to polyethylene and polypropylene.
15 And there is also a manila folder that was
16 produced here that's got a few other
17 documents. There is one document with a
18 handwritten note. Perhaps we can make
19 these -- I have got actually two, one is a
20 two page collection, and one looks to be a
21 five page collection.

22 MS. PASULKA: Mr. Benefiel, did you
23 fax us those documents you're talking about
24 right now?

25 MR. BENEFIEL: No, actually, I guess

1 it was poor planning to start out with
2 those. But they basically they are like
3 typewritten sheets, and there is a
4 handwritten note on top, and that's the
5 reason I'm going to ask Mr. Vizurraga whose
6 note. That looks like it may be his note.

7 MS. PASULKA: Can you fax those to us
8 right now, please?

9 MR. BENEFIEL: I guess we could. It
10 will take a couple of minutes.

11 MS. PASULKA: I will go down by the
12 fax machine. Maxwell will stay here.

13 MR. BENEFIEL: Okay, that's sounds
14 doable.

15 THE WITNESS: Ask my secretary to do
16 that. You want to fax each one of these
17 pages?

18 MR. BENEFIEL: Yeah. Everything the
19 same.

20 (Off the record.)

21 MR. BENEFIEL: The way this is
22 shaping up, there is going to be probably
23 some more, at least two more sheets I can
24 see right in front of me. My thinking is
25 that I will take whatever isn't made a

1 record, I am going take the ring binders
2 with me and go through them to see if there
3 is anything else in there of interest. But
4 obviously it won't be subject to the
5 deposition. And I will just have to send
6 you anything else that I pick out of the
7 ring binder. I guess it would have been
8 better if I got here a couple hours early.

9 MS. PASULKA: Are you going to take
10 everything in the two ring binders and
11 manila folder with you? Is that what
12 you're saying?

13 MR. BENEFIEL: Yes. Well, at least
14 the ring binders.

15 MS. PASULKA: Okay. Are you making a
16 copy, or are you taking them with you? Is
17 that your copy? I'm just -- we would like
18 to have a copy of whatever you're taking,
19 whether you make it of record or not. Try
20 to work out some kind of arrangements for
21 us to get a copy.

22 MR. BENEFIEL: Well, I can get you a
23 copy of it. We could see if they can run
24 it. Maybe I can just stick around in the
25 waiting room and look through it. And if

1 there is anything else, make copies of it
2 then. Maybe just run a copy of the whole
3 thing and send a copy to you, and I will
4 take a copy. That's probably the best
5 thing to do. There's not that many.

6 THE WITNESS: It's your money. We
7 will send you the bill.

8 MR. BENEFIEL: Have you gotten the
9 fax?

10 MS. PASULKA: No, we don't have the
11 fax yet.

12 MR. BENEFIEL: She has to make copies
13 first, at least she was of these.

14 MS. PASULKA: Because they are in a
15 bound volume?

16 MR. BENEFIEL: No, actually those
17 sheets are on white. The ones on the ring
18 binder have got like a background color.
19 They didn't -- she thought they might go
20 through a little bit -- wouldn't be clear.

21 MS. PASULKA: I am going to go check
22 again.

23 (Defendant's Exhibits 1 and 2
24 marked for identification.)

25 MR. BENEFIEL: I am sending you two

1 more sheets. I guess we can go forward
2 with Exhibits 1 and 2.

3 Q. Mr. Vizurraga, could you identify -- both
4 these sets of sheets seem to have initials and a
5 date.

6 A. Exhibit 1 and Exhibit 2.

7 Q. Do you know who put those initials on
8 top?

9 A. I did. Those are my initials. One
10 corresponds to 1987 and other one is likewise, 1987.
11 One is Sample Reference Guide, title. The other one
12 is Allied Resinous Products Incorporated Standard
13 Stock Items, title.

14 Q. How do we know that this was from 1987?

15 A. That came with the records.

16 Q. Pardon me?

17 A. It came from the files from 1987 that we
18 had.

19 Q. What is a sample reference guide?

20 A. Sample reference guide, that's all the
21 things that we make here. Give you overall
22 indication of the things that we produce here. That
23 is self-explanatory.

24 Q. What purpose would these typed sheets be
25 used for?

1 A. Customer wants to know exactly the
2 different types of products that we make basically.

3 Q. These would be sent in response to
4 inquiries?

5 A. Inquiries, exactly. For soliciting. For
6 inquiries. For even to reps. Just about any
7 potential customer.

8 Q. It was pulled out of a file that was
9 labeled 1987?

10 A. That's right. That's exactly right,
11 yeah.

12 Q. Dave Jordan maintain historical files
13 like that?

14 A. Not necessarily. Because we normally
15 destroy these files. We don't have the room to
16 maintain so much paperwork. I was surprised he had
17 those things. Very, very surprised. Very lucky
18 because I looked myself in the attic, I couldn't find
19 anything.

20 Q. Okay. Now I have the sheets that were
21 earlier faxed 1, 2, 3, 4, 5, 6 -- 8 sheets. I guess
22 we could make them Exhibit 3 through 10.

23 (Defendant's Exhibits 3
24 through 10 marked for
25 identification.)

1 Q. Okay. Mr. Vizurraga, I hand you the
2 sheets that have been marked Exhibits 3 through 10.

3 A. Exhibit 3, Exhibit 4, Exhibit 5, Exhibit
4 6, Exhibit 7, Exhibit 8, Exhibit 9, and Exhibit 10.
5 These are part -- at least it was part of our earlier
6 price list dated January 15, 1967.

7 Q. The standard products there would have
8 all been sold in that time period by Allied?

9 A. That's right.

10 Q. And up at the top of these sheets, there
11 is an industrial price list. And the sheet that
12 Mr. Jordan sent me earlier was marked distributor
13 price list?

14 A. Keep in mind, I didn't come to this
15 company until '82. So the purpose of exactly
16 differentiating private, industrial or commercial, I
17 had no idea.

18 Q. Might have been a two tier pricing
19 system?

20 A. It could have been.

21 Q. But you don't have personal knowledge of
22 what the system was?

23 A. No, I don't.

24 Q. Currently, you send similar price lists
25 out to your distributors and customers?

1 A. The methodology is the same, but
2 different format. Today we send to a distributor a
3 price list which includes volume, so many dollars, if
4 you buy 5,000 pounds, 10,000 pounds, and 40,000
5 pounds column. It's geared to volume. These early
6 sheets did not indicate that. So this is again,
7 1967. It was a different type of market. At that
8 time, I don't believe, as far as I recollect, this
9 was a commodity. Now it is a true commodity.
10 Highly, highly price sensitive.

11 Q. I show you again Defendant's Exhibit 5
12 which is the properties of Resinol type 0,
13 polypropylene?

14 A. Yes.

15 Q. Can you please find on there --

16 A. I'm surprised that I find this, because I
17 didn't think it existed way back at that time, 1967.
18 I don't know whose polypropylene at that time was.
19 In '82, it was Phillips. Shell perhaps. I don't
20 know in 1967.

21 Q. Is there anything on there that
22 corresponds to flexural modulus?

23 A. Here, we have modulus elasticity which is
24 compatible. It's about 180 thousand pounds per
25 square inch.

1 Q. Would that be roughly, of course not
2 exactly, flexural modulus?

3 A. That's correct. You have also here the
4 hardness perhaps which you didn't ask me. Let me see
5 if I find it. Hardness, Rockwell, between 80 and 90,
6 right here.

7 Q. Yes.

8 A. Also that's corresponding to 60 to 75 on
9 the "D" as in David scale. Is called D Shore,
10 S-h-o-r-e.

11 Q. The Rockwell would have been the "R"
12 scale?

13 A. I don't know. It does not indicate here.
14 Possibly, but I don't know. Possibly "R" scale.
15 More than likely, but I don't know.

16 Q. Okay. I have got -- I believe we faxed
17 this. It's the back page of a --

18 A. Corporate brochure.

19 Q. Company brochure, thank you. Which also
20 has properties on it. Chemical properties. It's got
21 date 1983 on it. We can make that Exhibit 11.

22 (Defendant's Exhibit 11

23 marked for identification.)

24 Q. Okay, I will show you what's been marked
25 Defendant's Exhibit 11.

1 A. Yes, Exhibit 11 is what we still using
2 as a corporate brochure.

3 Q. Is that the same chemical properties
4 chart used currently?

5 A. Basically mechanical properties which
6 erroneously say chemical properties. But should be
7 mechanical properties.

8 Q. Is there anything on there that
9 corresponds to flexural modulus?

10 A. Flexural modulus, you have on type O, 190
11 thousand pounds per square inch. Hardness and Shore
12 D hardness is between 60 to 75.

13 Q. Can you correspond that to Rockwell "R"
14 scale?

15 A. There are conversion factors in polymer
16 engineering. Look in engineering handbooks. You can
17 find them anywhere.

18 Q. You don't know offhand?

19 A. Not offhand, no.

20 Q. Are you currently using a resin that
21 adheres closely to that chart?

22 A. Yes, very much so.

23 Q. Do you switch off resins or is there only
24 one resin that can meet these --

25 A. No, there are many suppliers. It's

1 called polyolefins, p-o-l-y-o-l-e-f-i-n-s,
2 polyolefins. Polyolefins generation of all various
3 polyethylene, polypropylene, all styrene, all these.
4 Polyolefins are supplied by various companies. Like
5 I just mention two, let us say Exxon Corporation,
6 which is well known. And other one, is Dow Chemical.
7 These two chemical companies have different
8 factories, different physical locations, one in
9 Texas, one in some other place. All of the
10 mechanical and chemical properties are pretty much
11 compatible with one another. We have changed resins
12 from different suppliers. Today we may buy from
13 Exxon. Tomorrow we may buy from Shell, for instance,
14 or depends strictly on pricing.

15 Q. Unblended polypropylene is pretty much
16 going to have the same mechanical --

17 A. Oh yes. It's a commodity. That's right.

18 Q. So the industry has to know what it's
19 getting if it is a commodity?

20 A. That's right. Pretty much a standard.

21 Q. That was true in 1983?

22 A. Exactly. Yes. Even prior to that.

23 MR. BENEFIEL: Maybe I can check on
24 that other -- have you gotten the other
25 sheet yet?

1 MR. MAXWELL: Yeah, I think we have
2 it.

3 MS. PASULKA: Yeah, it's four pages.
4 We have it.

5 MR. BENEFIEL: Okay, we got ours
6 back.

7 MS. PASULKA: This is actually two
8 pages, front and back?

9 MR. BENEFIEL: Right. It came out of
10 the ring binder.

11 MS. PASULKA: Okay.

12 MR. BENEFIEL: There is two ring
13 binders. One of them seems to be more
14 recent. And I haven't really -- yeah, I
15 think one of them was earlier than the
16 other one. But they are pretty similar.
17 The old one goes back to -- well, I haven't
18 quite figured out what the difference is.
19 The reason I pulled those out, they had the
20 industrial price list on it as opposed to
21 the distributor which is similar to what
22 Dave Jordan gave me before. Okay, these
23 two sheets, these have 1983 date on them.
24 We can make these Exhibits 12 and 13.

25 (Defendant's Exhibits 12 and

1 13 marked for
2 identification.)

3 Q. Mr. Vizurraga, I'm showing you
4 Defendant's Exhibit 12, which seems to deal with
5 custom runs of extruded sheets and rolls.

6 A. Yeah, Exhibit 12 is a price list on
7 various products effective January 1st, 1983. This
8 is on polypropylene, which from 1,000 pounds to a
9 hundred thousand pounds.

10 Q. These are custom orders for --

11 A. No, that is standard. We do custom runs,
12 but normally kept these things in stock.

13 Q. It looks like the -- I'm sorry I don't
14 have a copy. It shows gauges from 20 thousandths up
15 to quarter inch?

16 A. That's right.

17 Q. In steps?

18 A. Uh-huh.

19 Q. And then it says here sheet size 12 inch
20 minimum width and length. Does that mean, at least
21 presumably, the company in those days would cut down
22 to 12 by 12 inches?

23 A. It could well be. Now, this says sheet
24 size 12 inches minimum width and length. That's
25 right. Maximum width and length. This is mostly in

1 rolls. Because you're talking about gauges from 60
2 thousandths to 150 thousandths. 30 thousandths to 59
3 thousandths, and 20 thousandths to 29 thousandths.
4 All this is basically rolls. Sheets on rolls.
5 Extruded sheets, we discussed earlier, sold
6 individually as a sheet form, but the majority was in
7 rolls. And where it says here the sheet size is 12
8 inches minimum. Minimum. Standard size is 48 inches
9 in width.

10 Q. It says 12 inch minimum width and length.
11 Those would have to be sheets, right?

12 A. That's right. Not necessarily.
13 Sometimes customer wanted 12 inches let's say of a
14 hundred feet, so we just make roll.

15 Q. It says 12 inch minimum width and length?

16 A. That's right. If a customer comes, for
17 example, says -- customer number one says I want 12
18 inches by a hundred feet. No problem. Customer
19 number two wants 12 inches by 110 feet. No problem.
20 Custom run to different length.

21 Q. It says 12 inch minimum width and length
22 for sheets, and it says down below, material through
23 19 thousandths thick available in rolls only?

24 A. The minimum -- we could not go let's say
25 12 inches by two inches. That's ridiculous. Have to

1 specify 12 inches -- I don't even know 12 inches in
2 width and length. Because this is 12 inches is a
3 foot square. A little piece like that. We just send
4 those things for free samples.

5 Q. This is a custom thousand pounds minimum.
6 So if you get outside your 4 by 8 sheets, but this
7 seems to be providing that possibility for the
8 customer?

9 A. Give the customer different options. Any
10 way they want them.

11 Q. How do you make your copolymer
12 polypropylene?

13 A. Copolymer chemically, it is a combination
14 of polypropylene with polyethylene with various
15 densities. Normally this type of product, it is
16 produced by the major resin manufacturers. And they
17 do this mixture at the reactor themselves. We buy
18 the pellets as copolymer.

19 Q. Okay, it's not blended here?

20 A. No. It is produced as copolymer.

21 Q. A standard proportion that you know of
22 polyethylene --

23 A. No, normally we go by mechanical
24 properties, which I don't remember which ones they
25 are. Also, they go by certain physical properties,

1 which I don't remember which they are also. But most
2 of the copolymers are used in today's market for
3 medical profession. In the past, maybe was used -- I
4 don't remember that at all. But as a general rule,
5 copolymer is being used for medical profession
6 exclusively almost because it is softer than regular
7 polypropylene. It does not have real industrial
8 application, so-to-speak, when you want to have
9 certain rigidity maybe.

10 MR. BENEFIEL: Well, that's all the
11 questions I have. Did you hear that?

12 MS. PASULKA: Yes. We don't have any
13 questions.

14 MR. BENEFIEL: You don't have any
15 questions?

16 MS. PASULKA: No. We would like a
17 copy of the transcript also.

18 (Off the record.)

19 MR. BENEFIEL: I suppose you can
20 waive signature of it. You don't have to
21 see it again if you don't want to.

22 THE WITNESS: No, I don't have to see
23 it.

24 MR. BENEFIEL: You can send the
25 original to me, a copy to them.

(Deposition concluded at 2:20
p.m.)

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1 STATE OF OHIO)

2 COUNTY OF ASHTABULA) SS.

C E R T I F I C A T E

3 I, Bonnie L. Sabados, a Court Reporter and Notary
4 Public for the State of Ohio, duly commissioned and
5 qualified do hereby certify that the within named:
6 LUIE R. VIZURRAGA was by me first duly
7 sworn to testify the truth, the whole truth,
8 nothing but the truth in the cause aforesaid; that
9 the testimony then given by him/her was reduced to
10 stenotype by me in the presence of said witness and both
11 counsel, afterwards transcribed with computer aided
12 transcription, and that the foregoing is a true and
13 correct transcription of the testimony so given by
14 him/her.

15 I do further certify that this deposition was taken
16 at the time and place in the foregoing caption specified
17 and was completed without adjournment.

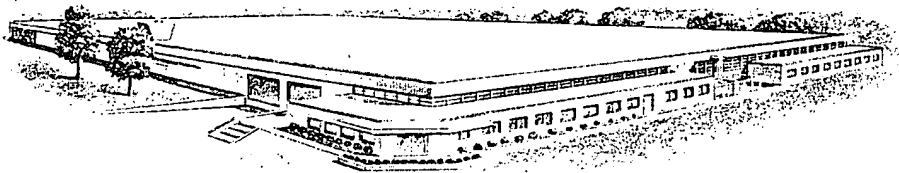
18 I do further certify that I am not a relative,
19 counsel or attorney for either party or otherwise
20 interested in the event of this action.

21 IN WITNESS WHEREOF, I have hereunto set my hand at
22 Conneaut, Ohio this 11th day of August, 1997.

23 Bonnie L. Sabados

24 Bonnie L. Sabados

25
Bonnie L. Sabados
Notary Public
My Commission Expires
January 15, 1999



0987

JWC

Allied Resinous Products, Inc.

BOX 620 • CLARK ST. & WHITNEY RD. • CONNEAUT, OHIO 44030 • TEL: 216/599-8175
FAX: 216/593-2003



ALLIED RESINOUS PRODUCTS, INC. Standard Stock Items

I. Polyolefin Materials - Natural Colors

A. Low-Density Polyethylene - Resinol Type A[®]

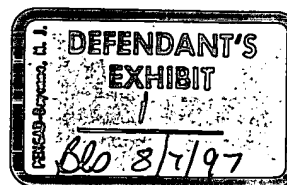
1. Sheets - Size: 48" x 96"; Gauges: .020" - 4.00"
2. Rods - Size: 8 ft. standard length; Diameters: .250" - 12.0"
3. Tubing - Size: Both 100 ft. coils and 8 ft. straight lengths;
Diameters: .250" OD x .125" ID to 2" OD x 1.75" ID
4. Blocks - Size: 12" x 12" to 12" x 48"; Gauges: 1" - 12"
5. Welding Rod - Size: 1 lb. coils; Diameters: .093" - .187"
6. Rolls - Size: 48" x 100 lbs. weight; Gauges: .010" - .090"

B. High-Density Polyethylene - Resinol Type F[®]

1. Sheets - Size: 48" x 96"; Gauges: .020" - 4.00"
2. Rods - Size: 8 ft. standard length; Diameters: .250" - 12.0"
3. Tubing - Size: 100 ft. coils; Diameters: .250" OD x .170 ID to
1" OD x .814" ID
4. Blocks - Size: 12" x 12" to 12" x 48"; Gauges: 1" - 12"
5. Welding Rod - Size: 1 lb. coils; Diameters: .093" - .187"
6. Rolls - Size: 48" x 100 lbs. weight ; Gauges: .015" - .060"

C. Polypropylene - Resinol Type O[®]

1. Sheets - Size: 48" x 96"; Gauges: .020" - 4.00"
2. Rods - Size: 8 ft. standard length; Diameters: .250" - 12.0"
3. Tubing - Size: 100 ft. coils; Diameters: .250" OD x .170" ID to
1" OD x .814" ID
4. Blocks - Size: 12" x 12" to 12" x 48"; Gauges: 1" - 3"
5. Welding Rod - Size: 1 lb. coils; Diameters: .125" - .187"
6. Rolls - Size: 48" x 100 lbs. weight; Gauges: .015" - .060"



II. Polypropylene Copolymer - Vizcomedic[®] FEP

A special polyallomer design for prosthetic use and available in both natural and "fleshtone" colors. Sheets are available in 48" x 96" size and in three different gauges: .125", .187", and .250".

III. High-Impact Polystyrene - Styronol[®]

Only available in white-opaque color from stock. Sheets are available in both 40" x 72" and 48" x 96" sizes, and in gauges from .015" to .250".

IV. ARP Cutting Board[™]

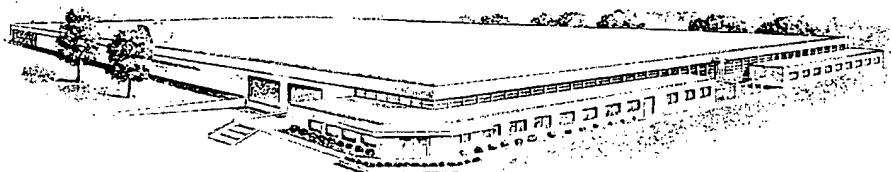
A High-Density Polyethylene sheet exclusively designed for consumer and industrial cutting board applications. The flat, stress-relieved sheet has a specially designed textured surface. Sheets are available only in a pure, natural-white color. Sheets are available in both 48" x 96" and 48" x 120" sizes, and in three different gauges: .500", .750", 1.000". ARP Cutting Board is listed by NSF International (Standard 51), meets the requirements of FDA Reg. 21CFR177.1520, and is accepted by the United States Department of Agriculture.

V. Vizcoclean[®] Paneling System

A complete system of sheets for walls and ceilings with "H" and "L" shape channels and fasteners. The Vizcoclean Paneling System is designed for laboratories, clean rooms, dairy parlors, free standing rooms, etc. Stock colors are white, green, and beige.

VI. Poly-Teak Board[™]

A product especially developed for marine applications and other continuous outdoor uses. The stress-relieved sheets are designed to resist discoloration, brittleness, and chalking, and have a special textured surface. Sheets are available from stock in a choice of six colors: Polar White, Sea Foam, Sand, Glacial Gray, Mercury Gray, and Black. Stock sheets come in a 48" x 96" size and in three different gauges: .500", .750", and 1.000". All Poly-Teak Board components meet the requirements of FDA Reg. 21CFR177.1520.



1987 JCL

Allied Resinous Products, Inc.

BOX 620 • CLARK ST. & WHITNEY RD. • CONNEAUT, OHIO 44030 • TEL: 216/599-8175
FAX: 216/593-2003



SAMPLE REFERENCE GUIDE

Current Stock Product Line

Resinol Type A - Low Density Polyethylene

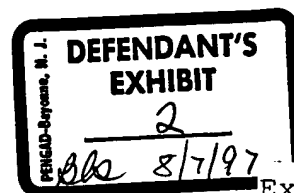
Uses: Packaging film, vacuum forming, radiation field, building film, construction field for vapor barriers, design molds, trays, transportating paint and bottling operations (tubing), spacers or slip sheets, rollers, dog holes, washers (stamping), neck braces, gaskets, etc.

<u>Sheets</u>	<u>Rolls</u>	<u>Tubing</u>
1) .010" gauge	10) .040" gauge	14) .250" OD x .125" ID
2) .015"	11) .060"	15) .375" OD x .250" ID
3) .020"		16) .750" OD x .625" ID
4) .030"		17) 1.50" OD x 1.25" ID
5) .040"	<u>Rods</u>	
6) .060"		<u>Welding Rod</u>
7) .090"	12) .250" diameter	
8) .125"	13) 2.25" - display	18) .125" diameter
9) .250"		

Resinol Type F - High Density Polyethylene

Uses: Packaging, boats, game boards, sand boxes, tote boxes, tanks, duct work, large trays, chutes, luggage, automobile parts, vacuum forming, toys, housings or covers, athletic equipment, lawn mower grass catchers, snow sleds, planter boxes, medical sterilizing dispensers, animal feeder liners, light diffusers, dance floors, snow shovels, door kick plates, wear strips in bottling operations, mixing paddles, vats and lids, fender liners, hockey rinks, tire traction aids, etc.

<u>Sheets</u>	<u>Rolls</u>	<u>Tubing</u>
19) .015" gauge	28) .015" gauge	32) .500" OD x .375" ID
20) .020"	29) .040"	
21) .030"		
22) .040"		
23) .060"	<u>Rods</u>	
24) .080"		
25) .090"	30) .250" diameter	
26) .187"	31) 1.50"	
27) .250"		



Resinol Type O - Polypropylene

Uses: Tanks and baskets, scrubbers, exhaust systems, separators, ducts, hoods, valves, housings, drains, laboratory equipment, trays and sinks, filter drums, vacuum forming, auto and marine parts, therapeutic braces and splints, shoes, gaskets, nuts, bolts, kidney machine filter plates, collar stays, etc.

Sheets

- 33) .020" gauge
- 34) .030"
- 35) .040"
- 36) .060"

Rods

- 39) .500" diameter
- 40) .750"
- 41) 2.50" - display

Welding Rod

- 42) .187" diameter

Rolls

- 37) .020" gauge
- 38) .030"

Styronol - High Impact Polystyrene

Uses: Vacuum forming, refrigerator door panels, drip pans, packaging, display items, toys, lighting panels, formed trays, tote boxes, food containers, drinking cups, coffee cup lids, electronic components, signs, automotive, furniture components, etc.

Sheets

- 43) .015" gauge
- 44) .060"
- 45) .080"

Vizcomedic - Polypropylene Copolymer

Uses: Developed for the orthomedic and prosthetic devices where superior properties are maximized. Examples - artificial limbs, neck braces, leg splints, etc.

Sheets

- 46) .125" gauge Fleshtone Color
- 47) .187" gauge Natural Color

Current Custom Product Line

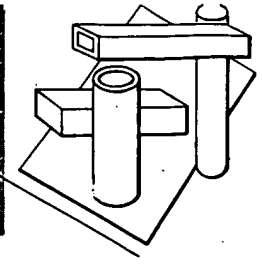
- | | | |
|------------------|---|--|
| 48) A/RED/2BOR - | Vizcoshield - 2% Red Borated Low Density Polyethylene
1" gauge Sheet | Uses: Neutron and gamma radiation shielding for nuclear devices in hospitals, ships, testing equipment and other applications. |
| 49) A/OD/XXX | .090" gauge Olive drab color Resinol Type A Sheet with no additives | Uses: Various military applications where the camouflage color of material is important, children's toys, camping equipment. |
| 50) A/YEL/UV | .250" x .350" Yellow color Resinol Type A Tubing with UV Stabilizer | Uses: Color coded tubing for outdoor conduits, components of children's outdoor toys, incasements for electrical wiring or fiber optics. |
| 51) ARP813 | .228" x .312" Black color Medium Density Polyethylene Tubing | Uses: Any tubing application where a custom color is required. |
| 52) F/RED/XXX | .125" gauge Red color Resinol Type F Sheet | Uses: Children's toys, tote boxes, game boards, automotive parts, mud flaps. |
| 53) F/ORG/XXX | .250" gauge Orange color Resinol Type F Sheet | Uses: Children's toys, water chutes, color coordinated motor housing, automotive parts, planter boxes. |
| 54) F/RED/XXX | .220" diameter Red color Resinol Type F Rod | Uses: Leaf rakes, children's toys. |
| 55) O/XXX/SKB | .250" gauge Natural color Resinol Type O with Stretch Knit Back | Uses: Conveyor belts for mining operations. |
| 56) O/BLK/40TF | .079" gauge Black color Resinol Type O Sheet with 40% Talc Filler | Uses: Medical instruments, A/C housings, fan shrouds, automotive parts, cabinets, down spouts. |

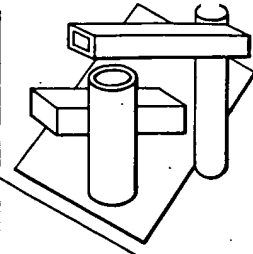
- 57) STY/BLK/XXX .093" gauge Black color Styronol Sheet
Uses: Vacuum formings, graphic arts applications, drip pans, furniture components.
- 58) Azdel/BLK/XXX .145" gauge Finished Azdel Sheet by PPG - Display Only
Uses: Battery cases, vacuum forming, automotive parts, inner fender wells.
- 59) STY/WO/CB .045" gauge White, Opaque color Styronol with Canvas Back - Display Only
Uses: Replacement for painting canvas.
- 60) O/XXX/40CALCAR-HF .040" gauge Natural color Resinol Type O Sheet with 40% Calcium Carbonate Filler and Haircell Finish - Display Only
Uses: Toys, housewares, outdoor equipment, lawn and patio equipment.
- 61) ARP 769 Tan color Polyallomer with Foaming Agent - Display Only
Uses: Floor and wall covering for gymnasiums.
- 62) Surlyn/XXX/XXX .200" gauge Surlyn Sheet - Display Only
Uses: Any application which requires high transparency, toughness, unusual resilience, and resistance to petroleum distillates - closures, bottles, safety goggles, appliances, sportswear.
- 63) ARP 228 .125" gauge Ethylene - Vinyl Acetate (EVA) Sheet - Display Only
Uses: Shrink wrap, produce bags, bumper pads, flexible toys, gaskets.
- 64) STY/WO/HF .090" gauge White Opaque color Styronol with Haircell Finish - Display Only
Uses: "Fingerprint-proof" appliance surfaces, vacuum forming, drinking cups, automotive.

Current Engineered Plastics and Compoundings

- 65) VIZX100/WHT/XXX .250" gauge White color Vizcoplete X-100 Sheet
Uses: Designed exclusively for usage as plates in filterpress chambers; also other uses where superior stiffness, thermo stability and elastic memory recovery are important.

- 66) VIZBOR/BRN/XXX .187" gauge Brown color Vizcoboard 10F8 Sheet
- Uses: Designed to replace steel and fiberglass in various usages. Extremely corrosion resistant and able to withstand temperatures of 270°F; chicken dropping boards, automotive engine parts.
- 67) VIZBOR/GRY/XXX .250" gauge Grey color Vizcoboard 10F8 Sheet
- Uses: Same as above for VIZBOR/BRN/XXX.
- 68) VIZCLN/XXX/XXX Vizcoclean System
- Uses: Complete plastic panel systems for the interior of farm and dairy buildings, clean rooms, food processing plants, refrigeration room walls, laboratory facilities, portable offices.
- 69) VIZCLN/XXX/FR .235" gauge V-O Flame Retardant Vizcoclean Panels
- Uses: Same as for (68) but where fire safety requirements are an integral part of building codes.
- 70) VIZX100/WHT/XXX 2" x 10.06" x 10.06" Sample of Vizcoplate X-100 Plate - Display Only
- Uses: Same as for (65)
- 71) ARP 581 .250" gauge V-O Flame Retardant Resinol Type F Sheet
- Uses: Any High Density Polyethylene applications where fire safety requirements are an integral part of building or product codes.





Industrial Price List

RESINOL TYPE A

(Low Density Polyethylene)

Extruded Sheets 36" x 60"

GAUGE	POUND PER SHEET	PRICE PER SHEET
.030"	2.16 lbs.	\$ 1.59
.060"	4.32 lbs.	3.04
.090"	6.47 lbs.	4.54
1/8"	8.99 lbs.	6.31
5/32"	11.24 lbs.	7.88
3/16"	13.48 lbs.	9.45
1/4"	17.98 lbs.	12.61
3/8"	26.97 lbs.	18.88
1/2"	35.96 lbs.	25.17
5/8"	44.96 lbs.	40.40
3/4"	53.95 lbs.	48.48
1"	71.93 lbs.	64.62
1-1/4"	89.91 lbs.	80.80

TYPE A FOUNDRY PLATE

1-1/2"	107.92 lbs.	158.34
1-3/4"	125.87 lbs.	184.65
2"	143.86 lbs.	211.05
2-1/2"	179.8 lbs.	329.70
3"	215.8 lbs.	395.71
3-1/2"	251.72 lbs.	461.58
4"	287.72 lbs.	527.59
5"	359.65 lbs.	659.48
6"	431.58 lbs.	791.39

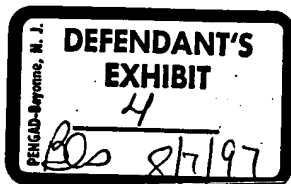
NOTE: Thicknesses available up to 60"

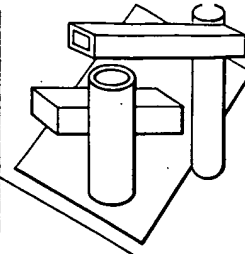
TOLERANCES

Thickness - .030" - .060" +/-10% Width - +1/2 -.000
Thickness - .090" - 6" +/- 5% Length - +1/2 -.000

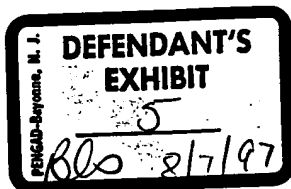
All thicknesses are stocked in natural and black, no additional cost for black.

EFFECTIVE JANUARY 15, 1967





Industrial Price List



PROPERTIES OF RESINOL

TYPE "O"

(Polypropylene)

PROPERTY	UNITS	TEST METHODS	DATA
Color			Natural
Density	gms/cc	D1505-57T	.90 - .91
Environmental Stress Cracking		D1693-59T	310 - 340
Tensile Strength, 2" min	psi	D638-58T	3200 - 5300
Elongation, 2" min	%	D638-60T	1.1 - 10
Impact Strength			
IZOD (notched) 73° F	ft. lbs./in		0.8 - 1.3
IZOD (unnotched) 73° F			> 80
IZOD (notched) 0° F			0.34
Vicat Softening Temp.	F		330-335
Brittleness Temp.	F		32 to -20
Heat Distortion Temp. 66psi.	F		210 - 220
Co-efficient of Linear Expansion	in/in/°F	D696-44	5.8 x 10 ⁵
Hardness	D scale	Shore	60 - 75
		Rockwell	80 - 90
Modulus of Elasticity (2in/min)	psi	D638-56T	180M - 190M
Deformation under Load			
(122°F-2000 psi-24 hrs)	%	D621-48T	1
Compressive Stress @ 1% offset	psi	D695-54	5500 - 6500
ELECTRICAL PROPERTIES			
Dielectric Constant (10 ⁶ cycles)	volts/mil	D150-54T	2.1 - 2.3
Dissipation Power Factor			
(10 ⁶ cycles)		D150-54T	0.0003
Dielectric Strength, 1/8" thick			
short time	volts/mil	D149-55T	600
step-by-step,			650
1/8" thickness			
Volume Resistivity	ohm/cm		6.5 x 10 ¹⁶

NOTE: The above properties are minimum to maximum value ranges, which include all special formulated polyolefins.

Allied Resinous Products, Inc. will not assume responsibility for the use of information contained in this publication.

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ALLIED RESINOUS PRODUCTS, INC.

CLARK STREET & WHITNEY ROAD • BOX 620 • CONNEAUT, OHIO

PHONE 216-599-6466 • TWX 216-589-9503

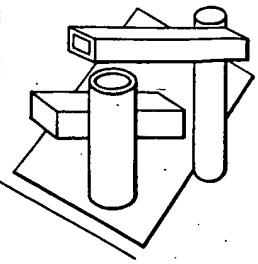
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The Plastic Foundry

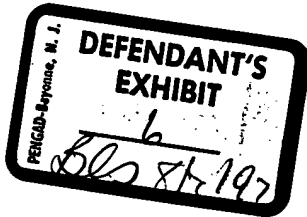


SHEETS, RODS, BLOCKS, TUBING, WELDING ROD

Available in
RESINOL
BORONOL
STYRONOL SHEET



Industrial Price List



RESINOL TYPE F

(High Density Polyethylene)

Extruded Sheets 36" x 60"

GAUGE	POUNDS PER SHEETS	PRICE PER SHEET
.030"	2.35 lbs.	\$ 1.76
.060"	4.70 lbs.	3.37
.090"	6.75 lbs.	4.82
1/8"	9.37 lbs.	6.68
5/32"	11.71 lbs.	8.35
3/16"	14.05 lbs.	10.04
1/4"	18.74 lbs.	13.37
3/8"	28.11 lbs.	20.15
1/2"	37.47 lbs.	26.86

TOLERANCES

Thickness - .030" - .060" +/- 10%

.090" - 1/4" +/- 5%

Width & Length - +1/2" - .000

NOTE: ALL RESINOL TYPE "F" sheets .030 - .090 are stocked in .96 density (Vacuum Forming Grade)

Sheets 1/8" - 1/4" thick are stocked in .95 density (Environmental Stress-Crack Resistant)

Sheets 1/8" - 1/4" will be supplied on special request in .96 density, or Vacuum Forming Grade at no additional cost.

All thicknesses are stocked in natural and black; no additional cost for black.

EFFECTIVE JANUARY 15, 1967

ALLIED RESINOUS PRODUCTS, INC.

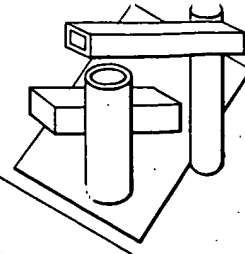
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The Plastic Foundry

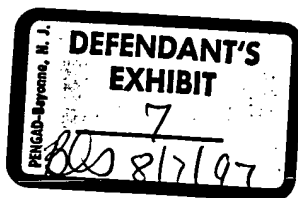


SHEETS, RODS, BLOCKS, TUBING, WELDING ROD

Available in
**RESINOL
BORONOL
STYRONOL SHEET**



Industrial Price List



RESINOL TYPE O

(Polypropylene)

Extruded Sheets 48" x 96"

GAUGE	POUNDS PER SHEET	PRICE PER SHEET
.020"	3.01 lbs.	\$ 2.87
.025"	3.77 lbs.	3.58
.030"	4.52 lbs.	3.77
.040"	6.03 lbs.	5.03
.050"	7.50 lbs.	6.25
.060"	9.04 lbs.	7.54
.070"	10.55 lbs.	8.80
.080"	12.50 lbs.	10.42
.090"	13.50 lbs.	11.25
1/8"	18.84 lbs.	15.67
3/16"	28.25 lbs.	23.34
1/4"	37.67 lbs.	31.34
3/8"	56.16 lbs.	46.81
1/2"	74.88 lbs.	66.15

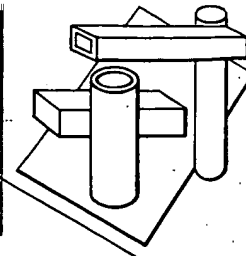
TOLERANCES

Thickness - .020 - .060 +/-10%

.070 - 1/2" +/-5%

Width & Length - + 1/2" - .000

EFFECTIVE JANUARY 15, 1967



Industrial Price List

PROPERTIES OF RESINOL

TYPE "F"

(High Density Polyethylene)

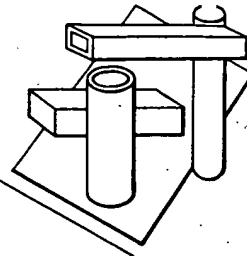
PROPERTY	UNITS	TEST METHODS	DATA
Color			Natural
Density	gms/cc	D1505-57T	0.941 - 0.965
Environmental Stress Cracking		D1693-59T	<1- > 1000
Tensile Strength			
20" /min	psi (kg/cm ²)	D638-60T	2600 (185) 4800 (340)
2" /min	psi (kg/cm ²)	-	3500 (250) 4700 (330)
Elongation			
20" /min	%	D638-60T	12-700
2" /min	%	-	128-860
Impact Strength	ft. lbs/in notch		
	(cm kg/cm)	D256-56	0.8 (43) -14 (76)
Vicat Softening Temp.	F (C)	D1525-58T	235 (112) - 260 (132)
Brittleness Temp.	F (C)	D746-55T	<-180 (-118) to -100 (-73)
Heat Distortion Temp.			
66 psi (4.6 kg)	F (C)	D648-56	160 (71) -170 (77)
Coefficient of Linear Expansion	in/in/C	D694-44	1.3 x 10 ⁻⁴
Hardness	D scale	Shore	55 - 70
Modulus of Elasticity	psi (kg/cm ²)	D638-56T	60m (4m) -150m (11m)
Deformation under load (122°F-2000psi-24hrs)	%	D621-48T	9.3 - 20
Compressive Stress at 1% Offset	psi	D695-54	3200-3600
ELECTRICAL PROPERTIES			
Dielectric Constant			
100 kc		D1531-62	2.32
1 mc		-	2.32
Dissipation Factor			
100 kc		D1531-62	<0.0001
1 mc		-	<0.0001
Dielectric Strength, 1/8"			
(3.18mm) thick	volts/mil (volts/mm)	D149-61	500 (12.7)
Volume Resistivity	ohm-cm		>6 x 10 ¹⁵

NOTE: The above properties are minimum to maximum value ranges, which include all special formulations.

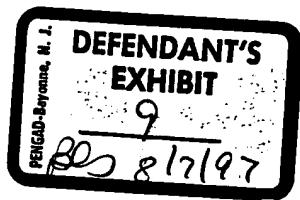
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Industrial Price List



RESINOL TYPE F

(High Density Polyethylene)

Extruded Rolls 48" Wide

GAUGE	APPROX. WEIGHT PER ROLL	PRICE/LB.
.010"	100 lbs.	\$.74
.015"	100 lbs.	.74
.020"	100 lbs.	.74
.025"	100 lbs.	.74
.030"	100 lbs.	.73
.040"	100 lbs.	.73
.050"	100 lbs.	.73
.060"	100 lbs.	.70

TOLERANCES

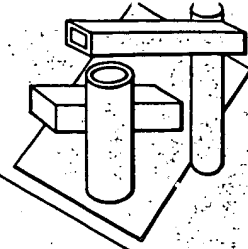
Thickness .010" through .060" +/- 10%

Width +1/2" -.000

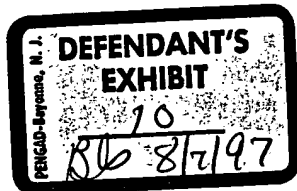
NOTE: Standard RESINOL TYPE "F" stock rolls are on 3" I.D. cores and have an approximate diameter of 12".

Available in colors on special request.

EFFECTIVE JANUARY 15, 1967



Industrial Price List



RESINOL TYPE F

(High Density Polyethylene)

Extruded Sheets 48" x 96"

GAUGE	POUNDS PER SHEET	PRICE PER SHEET
.030"	4.8 lbs.	3.58
.040"	6.40 lbs.	4.75
.050"	8.00 lbs.	5.97
.060"	9.59 lbs.	6.85
.070"	11.19 lbs.	7.98
.080"	12.79 lbs.	9.14
.090"	14.39 lbs.	10.27
1/8"	19.99 lbs.	14.27
3/16"	29.98 lbs.	21.39
1/4"	39.97 lbs.	28.55
3/8"	59.96 lbs.	42.98
1/2"	79.95 lbs.	57.35

TOLERANCES

Thickness .030" - .060" +/-10%

.070" - 1/2" +/- 5%

Width & Length - +/- 1/2" -.000"

NOTE: ALL RESINOL TYPE "F" sheets .030 - .090 are stocked in .96 density (Vacuum Forming Grade)

Sheets 1/8" - 1/2" thick are stocked in .95 density (Environmental Stress-Crack Resistant)

Sheets 1/8" - 1/2" will be supplied on special request in .96 density, or Vacuum Forming Grade at no additional cost.

All thicknesses are stocked in natural and black, no additional cost for black.

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PRODUCT INFORMATION AND APPLICATIONS

RESINOL TYPE A® (Low density polyethylene)

Resinol Type A® is the most popular material for applications where structural strength, rigidity and high working temperatures are not required. Available in a wide range of sizes, in sheet, rod, roll and coil formations.

Product Applications

Packaging film, Washers, Gaskets, Environmental barriers, Trays, Rollers and many more.

RESINOL TYPE F® (High density polyethylene)

This rugged polyethylene is one of the most useful and versatile of all plastics. It is more rigid and heat resistant than Type A, and offers higher tensile strength. Available in a wide range of sizes in sheet, rod, roll and coil formations.

Product Applications

Chutes for concrete and chemical processing, Toys, Food processing installations, Industrial tote boxes, Small boats, Game boards, Meat boards, Vapor barriers.

RESINOL TYPE O® (Polypropylene)

Exhibiting outstanding chemical, stress crack resistance and electric properties, Resinol Type O offers almost limitless application. Available in a wide range of sizes, in sheet, rod, coils and tubing.

Product Applications

Tanks, Scrubbers, Exhaust systems, Ducts, Hoods, Water treatment equipment, Gaskets, Laboratory and hospital ware, Wire coating, Sporting goods.

STYRONOL® (High impact styrene)

Styronol is ideally adapted to vacuum drawing and other forming techniques. It is available only in sheet form in a variety of gauges.

Product Applications

Typical uses of styrene include Lighting panels, Tote boxes, Electronic components, Refrigerator door panels, Drip pans, Advertising displays, Furniture components.

ARP, INC. PROPRIETARY PRODUCTS

For complete information and specifications on Vizcoclean Panels, Vizcoshield Radiation Materials, Vizcoplete X-100 Series, Vizcomedic FEP System, Vizcoboar—10F8 and other ARP products, call (216) 599-8175 today!

COMPOUNDING CAPABILITIES

Thermoplastic compounding capabilities up to 10 million pounds per year.

Property	A	F	O	Styronol
Density	.910–	.941–	.90–	1.00–
Grams/cc	.925	.965	.91	1.04
Environmental Stress Cracking D1693-59T	<1– >1000	<1– >1000	310– 340	Impact Strength –40°F. 8 lb. ft. 73.4°F. 3.1 lb. ft.
Tensile Strength 20' min. P.S.I.	1400– 2200	2600– 4800	3200– 5300	4400
Brittleness Temp.	–180°F	–180°F	32°F –20°F	>–148°F
Heat Distortion Temp. at 66 P.S.I.	110°F– 115°F	160°F– 170°F	210°F	212°F
Softening Temp.	176°F	250°F	300°F	300°F
Hardness Shore D	44-48 67	55-70	60-75	Rockwell L
Elongation %	650	>600	12	
Flexural Modulus P.S.I. x 10 ³	48	160	190	

For a complete mechanical, chemical and electrical properties chart on each proprietary product, please contact Allied Resinous Products, Inc. Custom runs, sizes and formulations upon request.

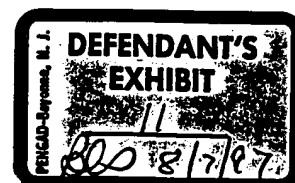
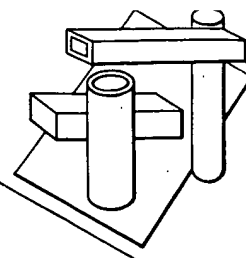


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Confidential-Distributor Price List

RESINOL TYPE O

(Polypropylene)

Custom Run - Extruded Sheets and Rolls

2500 lbs. Minimum Run

	Gauge .060"-.250"	Gauge .030"-.059"	Gauge .020"-.029"
1,000 - 2,500 lbs.	1.12/lb.	1.23/lb.	1.42/lb.
2,500 - 5,000 lbs.	1.12/lb.	1.23/lb.	1.42/lb.
5,000 - 10,000 lbs.	1.09/lb.	1.20/lb.	1.39/lb.
10,000 - 15,000 lbs.	1.05/lb.	1.15/lb.	1.33/lb.
15,000 - 20,000 lbs.	1.01/lb.	1.12/lb.	1.29/lb.
20,000 - 35,000 lbs.	.99/lb.	1.09/lb.	1.26/lb.
35,000 - 50,000 lbs.	.97/lb.	1.07/lb.	1.24/lb.
50,000 - 100,000 lbs.	.92/lb.	1.02/lb.	1.17/lb.

Formula to Compute Sheet Weight: (length x width) x gauge x .0327" = approx. wt/pc.

.500" thk. - 1" thk. - \$1.46/lb.

COLORS:

SHEET SIZE: 12" Minimum width and length.
48" Maximum width by any length.

FINISH: Standard Machine, Haircell.

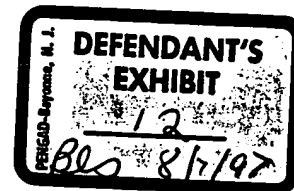
GAUGE CHANGE: Gauge changes combined for maximum weight category will be quoted on request.

ROLL SIZE: Will be wound on 3" I.D. cores with a 12" minimum width and 48" maximum width.
(Larger diameter cores available on special request). Roll diameter will be 12" dia. for standard packaging but can be supplied up to 48" dia. on special request.

SCRAP ALLOWANCE: Scrap allowance will be honored on granulated material to be used back into customer sheets.

PACKAGING: Cut-to-size sheets will be palletized.

TERMS: Net 30 F.O.B. Conneaut, Ohio



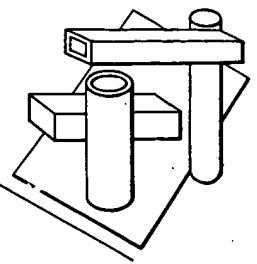
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ALLIED RESINOUS PRODUCTS, INC.

CLARK STREET & WHITNEY ROAD • BOX 620 • CONNEAUT, OHIO 44030

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Confidential-Distributor Price List

RESINOL TYPE A
(Low Density Polyethylene)
Custom Run-Extruded Sheets and Rolls
1000 lbs. Minimum Run

2500 lbs. Minimum Run for:

- 1.) Colors
- 2.) Non-Std. Thickness
- 3.) Laminations
- 4.) Textures

	Gauge .060"-.100"	Gauge .030"-.059"	Gauge .010"-.029"
1,000 - 2,500 lbs.	\$.84/lb.	\$.93/lb.	\$1.13/lb.
2,500 - 5,000 lbs.	.84/lb.	.93/lb.	1.13/lb.
5,000 - 10,000 lbs.	.825/lb.	.91/lb.	1.11/lb.
10,000 - 15,000 lbs.	.79/lb.	.87/lb.	1.06/lb.
15,000 - 20,000 lbs.	.77/lb.	.845/lb.	1.03/lb.
20,000 - 35,000 lbs.	.75/lb.	.825/lb.	1.00/lb.
35,000 - 50,000 lbs.	.74/lb.	.81/lb.	.99/lb.
50,000 - 100,000 lbs.	.70/lb.	.77/lb.	.94/lb.

Formula For Sheet Weight: (length x width) x gauge x .0333" = Approx. wt/pc.

COLORS: Color changes combined for maximum weight category will be quoted on request.

SHEET SIZE: 12" Minimum width and length.
48" Maximum width by any length.
Material thru .019" thick available in rolls only.

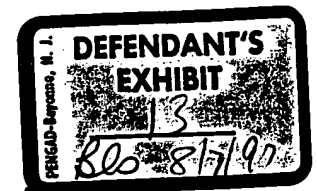
GAUGE CHANGE: Gauge changes combined for maximum weight will be quoted on request.

ROLL SIZE: Will be wound on 3" I.D. cores with a 12" minimum width and 48" maximum width. (Larger diameter cores available on special request). Roll diameter will be 12" dia. for standard packaging but can be supplied up to 48" dia. on special request.

SCRAP ALLOWANCE: Scrap allowance will be honored on granulated material to be used back into customer sheets.

PACKAGING: Cut-to-size sheets will be palletized.

TERMS: Net 30 F. O. B. Conneaut, Ohio



EFFECTIVE January 1, 1983

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ALLIED RESINOUS PRODUCTS, INC.

CLARK STREET & WHITNEY ROAD • BOX 620 • CONNEAUT, OHIO 44030

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